

Appln No. 10/724,382
Amdt date August 15, 2007
Reply to Office action of July 27, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 - 10 (Cancelled)

11. (Currently Amended) A sterilizable connector comprising:
 a connector housing which has been sealed to prevent moisture from entering it;
 a ~~multi-wire cable~~ flexible planar circuit which is electrically coupled to a probe
at a first end and coupled to the connector housing at a second end, said ~~multi-wire cable~~ flexible
planar circuit having its second end sealed ~~within~~ with the connector housing to prevent moisture
from entering the sealing between the ~~multi-wire cable~~ flexible planar circuit and the connector
housing; and
 a plurality of electrical contacts formed on at least one surface of the sterilizable
connector and on the flexible planar circuit,
 wherein the sterilizable connector can be connected to a mating connector of a
medical equipment while the sterilizable connector remains sealed, said mating connector having
a plurality of mating contacts formed thereon for electrical coupling with the electrical contacts
of the sterilizable connector, and
 wherein the sterilizable connector can be separated from the mating connector to
be sterilized.

12. (Original) The sterilizable connector of claim 11, wherein the medical equipment
comprises an ultrasound platform.

13. (Currently Amended) ~~The sterilizable connector of claim 11, further comprising~~
 A sterilizable connector comprising:
 a connector housing which has been sealed to prevent moisture from entering it;

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a multi-wire cable which is electrically coupled to a probe at a first end and coupled to the connector housing at a second end, said multi-wire cable having its second end sealed with the connector housing to prevent moisture from entering the sealing between the multi-wire cable and the connector housing;

a plurality of electrical contacts formed on at least one surface of the sterilizable connector; and

a flexible circuit board and a backing, wherein the flexible circuit board is at least partially wrapped around said backing, and the backing provides a spring force to keep the electrical contacts in contact with the mating contacts,

wherein the sterilizable connector can be connected to a mating connector of a medical equipment while the sterilizable connector remains sealed, said mating connector having a plurality of mating contacts formed thereon for electrical coupling with the electrical contacts of the sterilizable connector, and

wherein the sterilizable connector can be separated from the mating connector to be sterilized.

14. (Original) The sterilizable connector of claim 13, wherein the flexible circuit board includes a plurality of wires formed thereon and the electrical contacts are formed by plating a gold layer over the wires.

15. (Original) The sterilizable connector of claim 13, wherein the flexible circuit board is molded to the connector housing so that the sterilizable connector comprises a unitized molded connector.

16. (Currently Amended) A sterilizable connector comprising:
a connector housing which has been sealed to prevent moisture from entering it;
a multi-wire cable which is electrically coupled to a probe at a first end and coupled to the connector housing at a second end, said multi-wire cable having its second end

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sealed ~~within~~ with the connector housing to prevent moisture from entering the sealing between the multi-wire cable and the connector housing; and

a plurality of electrical contacts formed on at least one surface of the sterilizable connector,

wherein the sterilizable connector can be connected to a mating connector of a medical equipment, said mating connector having a plurality of mating contacts formed thereon for electrical coupling with the electrical contacts of the sterilizable connector,

wherein the sterilizable connector can be separated from the mating connector to be sterilized, and

wherein an anisotropic conducting contact pad is disposed between the sterilizable connector and the mating connector.

17. (Original) The connector assembly of claim 16, wherein the anisotropic conducting contact pad comprises a polymer matrix and a plurality of parallel wires embedded in the polymer matrix.

18. (Original) The connector assembly of claim 17, wherein the wires between each pair of electrical and mating contacts are deformed upon mating between the sterilizable connector and the mating connector.

19. (Currently Amended) A sterilizable connector comprising:
a connector housing which has been sealed to prevent moisture from entering it;
a multi-wire cable which is electrically coupled to a probe at a first end and coupled to the connector housing at a second end, said multi-wire cable having its second end sealed ~~within~~ with the connector housing to prevent moisture from entering the sealing between the multi-wire cable and the connector housing; and
a plurality of electrical contacts formed on at least one surface of the sterilizable connector,

wherein the sterilizable connector can be connected to a mating connector of a medical equipment, said mating connector having a plurality of mating contacts formed thereon for electrical coupling with the electrical contacts of the sterilizable connector,

wherein the sterilizable connector can be separated from the mating connector to be sterilized, and

wherein mating surfaces between the sterilizable connector and the mating connector is V-shaped, wherein the electrical contacts make electrical connection with the mating contacts on each of the two surfaces of the V-shaped mating surfaces.

20. (Original) The sterilizable connector of claim 19, wherein an anisotropic conducting contact pad is disposed on each mating surface between the sterilizable connector and the mating connector when the connectors are mated so as to form electrical connection.

21. (Original) The sterilizable connector of claim 19, wherein the V-shaped mating surfaces provide self-centering during mating between the sterilizable connector and the mating connector.

22. (Original) The sterilizable connector of claim 20, wherein each anisotropic conducting contact pad comprises a polymer matrix and a plurality of parallel wires embedded in the polymer matrix.

23. (Original) The sterilizable connector of claim 22, wherein the wires between each pair of electrical and mating contacts are deformed upon mating between the sterilizable connector and the mating connector.

24. (Currently Amended) A connector assembly comprising:
a sterilizable connector comprising:
a connector housing which has been sealed to prevent moisture from entering it;
a multi-wire cable which is electrically coupled to a probe at a first end and coupled to the connector housing at a second end, said multi-wire cable having its second

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end sealed ~~within~~ with the connector housing to prevent moisture from entering the sealing between the multi-wire cable and the connector housing; and

a plurality of electrical contacts formed on at least one surface of the sterilizable connector;

a standard connector for connecting directly to a standard medical equipment connector of a medical equipment;

a mating connector for electrically coupling the sterilizable connector to the standard connector while the sterilizable connector remains sealed, said mating connector having a plurality of mating contacts formed thereon for electrical coupling with the electrical contacts of the sterilizable connector,

wherein the sterilizable connector can be separated from the standard connector and the mating connector to be sterilized.

25. (Original) The connector assembly of claim 24, wherein the medical equipment comprises an ultrasound platform.

26. (Original) The connector assembly of claim 24, wherein the sterilizable connector further comprises a flexible circuit board and a backing, wherein the flexible circuit board is at least partially wrapped around said backing, and the backing provides a spring force to keep the electrical contacts in contact with the mating contacts.

27. (Original) The connector assembly of claim 26, wherein the flexible circuit board includes a plurality of wires formed thereon and the electrical contacts are formed by plating a gold layer over the wires.

28. (Original) The connector assembly of claim 26, wherein the flexible circuit board is molded to the connector housing so that the sterilizable connector comprises a unitized molded connector.

29. (Original) The connector assembly of claim 24, wherein a relative motion between the electrical contacts and the mating contacts provide a mechanism for removing contaminants between the contacts, thereby allowing a reliable electrical connection.

30. (Currently Amended) A medical ultrasound system comprising:
an ultrasound platform that can be used to generate, process and display ultrasound images;
a probe for taking ultrasound images;
a sterilizable connector comprising:
a connector housing which has been sealed to prevent moisture from entering it;
a ~~multi-wire cable~~ flexible planar circuit which is electrically coupled to the probe at a first end and coupled to the connector housing at a second end, said ~~multi-wire cable~~ flexible planar circuit having its second end sealed with the connector housing to prevent moisture from entering the sealing between the ~~multi-wire cable~~ flexible planar circuit and the connector housing; and
a plurality of electrical contacts formed on at least one surface of the sterilizable connector and on the flexible planar circuit;
a standard connector for connecting directly to the ultrasound platform;
a mating connector for electrically coupling the sterilizable connector to the standard connector while the sterilizable connector remains sealed, said mating connector having a plurality of mating contacts formed thereon for electrical coupling with the electrical contacts of the sterilizable connector,
wherein the sterilizable connector can be separated from the standard connector and the mating connector, such that the probe and the sterilizable connector can be sterilized.

31. (Original) The system of claim 30, wherein the sterilization is through one selected from a group consisting of immersion in a disinfecting liquid and steam autoclaving.

32. (Original) The system of claim 30, wherein the probe is a sterilizable finger mounted probe.

33. (Original) The system of claim 32, wherein the finger mounted probe includes a sensor array that is rotated with respect to a portion of a finger on which the finger mounted probe is mounted.

34. (New) The sterilizable connector of claim 13, wherein the multi-wire cable comprises a flexible planar circuit.

35. (New) The sterilizable connector of claim 16, wherein the multi-wire cable comprises a flexible planar circuit.

36. (New) The sterilizable connector of claim 35, wherein the at least one surface of the sterilizable connector on which the plurality of electrical contacts are formed, is on the flexible planar circuit.

37. (New) The sterilizable connector of claim 19, wherein the multi-wire cable comprises a flexible circuit.

38. (New) The connector assembly of claim 24, wherein the multi-wire cable comprises a flexible planar circuit.

39. (New) The connector assembly of claim 38, wherein the at least one surface of the sterilizable connector on which the plurality of electrical contacts are formed, is on the flexible planar circuit.